APPENDIX C:

REGIONAL ENERGY PROFILE

April 1998

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REGIONAL ENERGY PROFILE

Overview

This report contains solar energy profiles of the 12 states in the DOE's Denver Regional Office of Energy Efficiency and Renewable Energy. It includes summaries of energy use, renewable energy consumption, incentives, laws, licensing requirements, state programs and policies, and state contacts for solar energy programs. The 12 states covered in the Denver Region are:

> Colorado, Kansas, Louisiana, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming.

The data in this section have been collected to provide a snapshot of existing solar energy use and policies that promote solar energy in the region. The data may help in identifying strategies that will promote the Million Solar Roofs Initiative in the region.

Summary of State Profile Contents

General Statistics -- Basic statistics on each state, such as the population, gross domestic product, major industries, and current governor.

Energy Consumption Summary -- Information on the current cost of electricity, generation capacity, fuel sources, energy consumption patterns, and the use of renewable energy in each state.

Portfolio Standards and Set Asides -- Portfolio standards are regulations requiring that a certain percentage of generating capacity (either a utility's or a state's) must be derived from renewable energy sources by a certain date. Set asides, which are similar, require that a percentage or fixed amount of a utility's or state's newly constructed generating capacity be from renewable sources.
States: (0)

Systems Benefits Charges -- Systems benefits charges are on electric utility bills, usually administered on a charge per kWh basis, that are used to support renewable energy and energy efficiency projects in the state.
States: (1) Montana

Green Pricing -- Green Pricing Programs vary considerably in their structure; however, they all operate under the premise that consumers voluntary pay more for electricity generated by renewable or clean energy resources.
States: (2) Colorado and Texas

Disclosure and Certification -- Disclosure regulations require utilities to reveal to consumers the fuel mix used in generating electricity. Certification regulations require that power sources marketed as "green" must meet certain standards to protect consumers.
States (1): Montana

Solar Access Laws -- Solar access laws have been passed in a number of states in the region. Most of these were created in the late 1970's and early 1980's in reaction to the oil crises. Usually, they are written to protect access to sunlight. In some cases they establish regulations allow solar easements to be used to protect access to solar energy. Of all of the states in the nation, 33 have some form of solar access laws.
States (6): Colorado, Montana, Nebraska, New Mexico, Utah, Wyoming

Income Tax Incentives --Several states adopted provisions allowing some level of personal or corporate income tax deduction or credit to help offset the initial cost of solar equipment purchased.
States (3): North Dakota (Personal Income Tax), Texas (Corporate Income Tax), Utah (both)

Solar Property Tax Incentives -- Several states have adopted tax incentives for buildings with solar energy systems. The nature of these programs differ from state to state, but generally, the value of the entire solar system can be deducted for several years.
States (4): Montana, North Dakota, South Dakota, Texas

Solar Contractor Licensing and Equipment Certification -- A number of states require contractors who install solar energy systems be certified. Some states also require that solar equipment also be certified in order to protect consumers. States with tax incentives often have equipment certification requirements to determine which systems qualify for tax credits.
States (5): Colorado, Louisiana, Oklahoma, Texas, Utah

Net Metering -- Several of the states in the region have adopted some form of net metering regulations. Fully implemented net metering requires utilities to purchase net excess power generated at market cost. Some state programs do not require purchasing or allow purchasing at the avoided cost rate.
States (5): Colorado, New Mexico, North Dakota, Oklahoma, Texas

State Construction Policies -- Some state legislatures have adopted state construction policies requiring state agencies to consider using renewable energy technologies when designing and constructing new buildings.
States (2): Colorado, Texas

Other Solar and Energy Efficiency Programs -- Solar and Energy Efficiency Programs already established in the state that may be useful for disseminating information or coordinating efforts of the Million Solar Roofs Initiative are listed.

Contacts -- For each state, staff members directly responsible for solar energy are listed.

Summary of State Renewable Electric Market and Policy Activities

State	Green Pricing[1]	Net Metering[2]	Retail Competition[3]
CO	Yes - Public Service Co. of Colorado, Fort Collins L&P, Holy Cross Electric, City of Aspen, Colorado Springs Utilities	Yes - QFs (1994)	Legislation expected to be introduced in '98 session.
KS	No	No	Legislation expected to be introduced in '98 session.
LA	No	No	PUC and legislative investigations underway; bills died in '97 sessions, will not be debated again until '99.
MT	No	No	Restructuring legislation enacted; retail competition for large industrial customers on or before 7/98; for all other customers on or before 7/02.
NE	No	No	No significant activity.
NM	No	Yes - QFs (1988)	Legislation is to be debated in the '98 session.
ND	No	Yes - renewables and cogen. (1991)	PSC and legislative investigations ongoing.
OK	No	Yes - renewables and cogen. (1988)	Restructuring legislation enacted; retail competition by 7/02.
SD	No	No	Current law allows for retail wheeling for large customers. No significant activity on full competition.
TX	Yes - Central & Southwest, West Texas Utilities, City of Austin	Yes - renewables (1986)	Retail wheeling legislation introduced in '97 session but not passed; legislative and PUC investigations on-going; wholesale retail wheeling enacted in 1995.
UT	No	No	PSC and legislative investigations ongoing.
WY	No	No	PSC investigation ongoing.

December, 1997

[1] Source: NREL, “Information Brief on Green Power Marketing Activity.” 12/97.
Note: “Green pricing” refers to an optional utility service that allows customers to support a greater level of utility company investment in renewables.
[2] Source: NREL, “Net Metering Programs.” 12/96 with supplementary information.
[3] Sources: EIA, “Status of Electric Utility Deregulation Activity.” Updated 12/2/97; Energetics, "Draft State-by-State Restructuring Activities." 10/9/97; Strategic Energy Ltd., "Electricity Competition Update." Updated 12/10/97; PV4U, "Renewables and Restructuring Update." December 1997.

1997 Regional Electricity Prices[1]

State	Residential cents/kWh	Commercial cents/kWh	All Sectors cents/kWh
CO	7.3	5.8	6.0
KS	7.1	6.4	6.2
LA	7.3	7.1	5.9
MT	6.6	6.4	5.5
NE	5.1	4.8	4.6
NM	9.0	8.0	7.1
ND	5.5	5.7	5.2
OK	5.5	4.8	4.7
SD	6.5	6.4	5.2
TX	7.0	6.9	6.1
UT	6.9	5.6	5.1
WY	5.8	5.2	4.3
US	7.9	7.3	6.6

[1] Source: U.S. Electric Power Monthly, April 1997. DOE/EIA-0226(97/04). Estimates for 1997 were preliminary.

Regional Solar Energy Use[1]

State	1995 Electric Utility Solar/PV Net Generation (Million kWh)	1995 Nonutility Gross Solar/PV Generation (Million kWh)	1996 Shipments of Solar Thermal Collectors (square feet)
CO	--	--	43,736
KS	--	--	2,615
LA	--	--	2,150
MT	--	--	2,105
NE	--	--	32
NM	--	--	27,984
ND	--	--	2,015
OK	--	--	900
SD	--	--	0
TX	253	--	90,187
UT	--	--	11,611
WY	--	--	88
US	3,909	824,193	7,161,445

[1] Source: U.S. DOE Renewable Energy Annual, October 1997. DOE/EIA-0630(97).

COLORADO

COLORADO	
Electricity Price (cents/kWh)	**6.0**
Utility Solar Generation	**N**
Green Pricing Programs	**Y**
Net Metering	**Y**
Restructuring	**N**
Financial Incentives	**Y**
Loans or Grants	

General Statistics

Population: (1995) 3,746,585 (25th) - 82% Urban 18% Rural
Total Area: 104,091 Square Miles
Gross State Product (GSP): $82.46 billion
Principal Industries: Manufacturing, government, tourism, agriculture, aerospace, electronics, equipment.
Manufactured Goods: Computer equipment, instruments, food, machinery, aerospace products.
Non-Attainment Areas: Denver Metropolitan Area (Ozone). Transitional, will be redesignated in 90 days to Attainment area. Colorado Springs, Denver Metropolitan, Longmont, Ft. Collins, Greeley (Carbon Monoxide). Attained but still formally on list.

Energy Consumption Summary

Principle Source of Electric Power Generation: Coal, Hydro, Gas, Fuel Oil
Coal Production Thousand Metric Tons (1994 EIA Data): 22,955
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 453,207
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 86

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
337.2	288.7	390.5	120.5	286.9

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
242.0	225.0	282.8	325.4	1,075.2

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
0.1 (39)	0.1 (43)	0.2 (46)	0.2 (48)	0.2 (54)	0.2 (57)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)

COLORADO

Data Year

1990	1991	1992	1993	1994	1995
7.3 (366)	7.7 (385)	8.1 (406)	7.6 (379)	7.4 (372)	8.3 (413)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
88	101	34205	*	*	5	*	1	282	0	*	*

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

Colorado has a number of green pricing programs underway. The first program, The Renewable Energy Trust, was started by Public Service of Colorado (PSCO) in 1993. It is a voluntary program that supports renewable energy demonstration projects. The initial focus of the program was installation of photovoltaic systems on off-grid non-profit and government buildings. Recently, PSCO changed the focus of the program to schools. Individuals participate by making monthly contributions or by rounding-up their energy bills. Currently, about 14,000 people participate and donate a total of about $100,000 to the program each year. The average donation for participants in the program is $1.77 per month.

Another solar green pricing program initiated by PSCO is the Solar Source program, a pilot program started in 1997. The goal of the program is to install 15 to 25 rooftop solar energy systems about 2 or 3 kW in size at below market rates. Funding for the program comes from PSCO, the U.S. DOE, the Utility Photovoltaic Group, the Colorado Office of Energy Conservation, and Solarex. The program sponsors plan to install about 200 systems by the year 2000.

Colorado also has two green pricing programs involving wind. PSCO's Windsource program allows residential customers to purchase 100 kWh blocks of wind power for an extra $2.50 per month. Commercial customers can sign up for blocks of 1000 kWh for $25 per month. Currently, PSCS has had over 3,000 customers sign up, which is enough customers to support 7 MW of wind energy. Eventually, PSCO expects the program to support about 20 MW of wind capacity.

The City of Fort Collins Light and Power started a similar pilot program in 1996. Commercial and residential customers can participate by spending an extra $0.02 per kWh, which represents a premium of 33%. Fort Collins Light and Power expects to install 3 wind turbines, if 350 customers make 3-year commitments. The program is expected to be underway by June of 1998.

COLORADO

Disclosure and Certification

None.

Solar Access Laws

Colorado has solar access laws that do not allow residential covenants restricting access to sunlight. There are also provisions allowing property owners to create solar easements to protect solar access.

Income Tax Incentives

None.

Solar Property Tax Incentives

None.

Solar Contractor Licensing and Equipment Certification

In Colorado, solar hot water heaters must be installed by state licensed plumbers, although plumbing rules vary according to local building guidelines. A licensing program for other solar contractors is currently being developed. Training is available through the Colorado Solar Energy Industries Association, which certifies individuals with one year of installation experience who pass a written exam. Training for installers is also available through Solar Energy International, a non-profit organization based in Carbondale, Colorado.

Net Metering

In 1988, the Colorado Public Utility Commission approved Public Service of Colorado's net metering tariff. Excess power produced by the customer is not purchased by the utility, but it is allowed in the system. The net metering program applies to all customers.

State Construction Policies

In August of 1997, an Executive Order was issued requiring standards to be developed for cost-effective use of renewable energy resources for state facilities. It also requires state agencies to use passive solar and other cost-effective solar technologies in new buildings. Under the Executive Order, the Office of Energy Conservation is to create incentives for state agencies to use electricity from renewable energy sources.

Other Solar and Energy Efficiency Programs

- State Energy Program (SEP)
- Weatherization Assistance Program (WAP)
- Alternative Fuel Rebates
- Commercial Standards
- Community and Regional Recycling
- Energy $aving Partners
- Rebuild Colorado
- Recycle Colorado
- RecycleNet
- Renewable Energy

COLORADO

- Solid Waste Minimization
- State and Public Buildings
- Transportation Partnerships
- Youth Energy Employment Program

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KANSAS

General Statistics

Population: (1995) 2,565,328 (32nd) - 70% Urban 30% Rural
Total Area: 82,277 Square Miles
Principal Industries: Manufacturing, finance, insurance, real estate, services
Manufactured Goods: Transportation equipment, machinery and computer equipment, food and kindred products, printing and publishing.
Non-Attainment Areas: 0
Gross State Product (GSP): $56.16 billion (1992)

KANSAS	
Electricity Price (cents/kWh)	**6.2**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Restructuring	**N**
Financial Incentives	**Y**
Loans or Grants	

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 258
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 712,730
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 136

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
290.9	369.1	367.8	103.6	405.9

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
197.7	171.7	391.0	280.2	1,040.6

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
6.3 (9)	6.7 (9)	7.0 (10)	5.8 (10)	5.7 (10)	6.4 (10)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

1990	1991	1992	1993	1994	1995
6.3 (317)	6.7 (334)	7.0 (352)	5.8 (292)	5.7 (287)	6.4 (318)

KANSAS

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
71	107	30555	*	*	47	*	5	1480	*	*	1

Portfolio Standards and Set Asides
None.

Systems Benefits Charges
None.

Green Pricing
None.

Disclosure and Certification
None.

Solar Access Laws
None.

Income Tax Incentives
None.

Solar Property Tax Incentives
None.

Solar Contractor Licensing and Equipment Certification
None.

Net Metering
None.

State Construction Policies
None.

Other Solar and Energy Efficiency Programs
- State Energy Program (SEP)
- Kansas Institutional Conservation Program

KANSAS

- Kansas Alternative Fuels Program - Contact point for Clean Cities
- Building Codes - On 5/8/97 new energy standards contained in Senate Bill 333 became effective. ASHRAE/IES 90.1-89 and MEC 93 (residential/commercial)
- Kansas Energy Education Project (KEEP)
- Debate Topic Information
- Kansas Electric Utilities Research Program (KEURP)

Contacts

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LOUISIANA

General Statistics

Population: (1995) 4,342,334 (21st) - 69% Urban 31% Rural
Total Area: 47,751 Square Miles
Non-Attainment Areas: Baton Rouge - The Baton Rouge area is classified as a serious non-attainment area for ozone. Lake Charles Louisiana is classified as a non-attainment area for Ozone. Louisiana does not violate any other air quality standards.
Gross State Product (GSP): $ 96.24 billion

LOUISIANA	
Electricity Price (cents/kWh)	**5.9**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Restructuring	**N**
Financial Incentives	**N**

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 3,141
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 5,169,705
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 11,753 (Includes 23,329 off shore production)
Principle Source of Electric Power Generation: Natural gas, petroleum, coal, nuclear, biofuels.

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
217.5	1,778.0	1,476.5	248.5	879.1

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
319.3	216.1	2,520.0	758.2	3,813.6

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
0.1(17)	0.1(18)	0.1(18)	0.1(18)	0.1(19)	0.1(20)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

1990	1991	1992	1993	1994	1995

LOUISIANA

8.4 (421)	8.9 (444)	9.3 (467)	8.2 (408)	8.0 (400)	8.9 (444)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
121	72	24417	1	*	219	*	45	15338	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

None.

Income Tax Incentives

None.

Solar Property Tax Incentives

None.

Solar Contractor Licensing and Equipment Certification

Louisiana requires that local building code departments make sure that all solar thermal and PV systems are certified. The state recommends the Solar Rating and Certification Corporation Program.

Net Metering

None.

State Construction Policies

None.

LOUISIANA

Other Solar and Energy Efficiency Programs

- State Energy Program (SEP)
- Institutional Conservation Program
- Energy Rated Homes of Louisiana
- Information Dissemination Services
- Agriculture/Energy Conservation
- Business, Industry, Commercial Energy Programs
- Transportation
- Utilities Interface
- Buildings - Residential, Low Income, Institutional
- Renewable Resources

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MONTANA

General Statistics

MONTANA	
Electricity Price (cents/kWh)	**5.5**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Restructuring	**Y**
Financial Incentives	**Y**
Industry Recruitment	
Solar Property Tax	

Population: (1995) 870,281 (44th) - 53% Urban 47% Rural
Total Area: 147,046 Square Miles
Principal Industries: Agriculture, timber, mining, tourism, oil & gas
Manufactured Goods: Food products, wood & paper products, primary metals, printing & publishing, petroleum & coal products
Non-Attainment Areas: 0
Gross State Product (GSP): $15.23 billion

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 37,775
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 50,416
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 48
Principle Source of Electric Power Generation: Coal, Hydro, Gas, Fuel Oil

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
171.2	59.6	159.6	45.8	435.4

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
63.8	51.0	162.5	101.7	378.9

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

1990	1991	1992	1993	1994	1995
1.8 (89)	1.9 (94)	2.0 (99)	1.8 (91)	1.8 (90)	2.0 (99)

MONTANA

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
21	51	19026	*	*	9	0	*	31	0	*	*

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

Montana has a systems benefits charge that supports energy efficiency, renewable energy resources, and low-income energy assistance. In 1995, the charge was 2.4% of utility revenues. As of yet, the distribution of funds has not yet been agreed upon, but 17% of the funds are required under the statute to be used for low income assistance and weatherization programs. An advisory committee will make recommendations to the legislature regarding implementation of restructuring. In 1999, decisions regarding the specific funding amounts that programs will receive will be made.

Green Pricing

None.

Disclosure and Certification

As of May 1997, electric utility bills in Montana were required to be unbundled. Bills are required to separately list distribution and transmission charges, electricity supply charges, competitive transition charges, and universal system benefits charges. The Montana Public Service Commission is going to issue specific rules for each of the components of customer electric bills, so there may be a requirement for disclosure of fuel mix.

Solar Access Laws

Montana adopted provisions allowing property owners to create solar easements to protect and maintain access to sunlight in 1979. The state also adopted provisions for the wind easements in 1983.

Income Tax Incentives

None.

Solar Property Tax Incentives

Montana has a statue that exempts renewable energy systems from taxation. Technologies eligible for tax exemptions are passive solar systems, solar space heaters, solar water heaters, and photovoltaic systems as well as other renewable energy technologies. The exemption is valid for 10 years after the installation of the system and in the amount of the value added to the property by the addition of the renewable energy system. Exemptions apply to single family residential systems costing up to $20,000 and for multifamily residential or nonresidential systems costing up to $100,000.

MONTANA

Solar Contractor Licensing and Equipment Certification

None.

Net Metering

None.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program (SEP)
- Greening of Yellowstone
- Rebuild America
- Technical and Financial Assistance for Public School Districts
- Technical and Financial Assistance for Health Care Facilities
- Building Codes and Standards
- Pollution Prevention - Nonpoint Source
- Energy/Water Conservation
- Technical and Financial Assistance
- Renewable Energy
- Alternative Fuels (HB 555)
- Low-income Home Weatherization and Energy Assistance (HB 10)
- State Building Energy Conservation Program (HB 12)
- Residential Geothermal Systems Credit
- Wind Energy System or Manufacturing Facility Credit

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NEBRASKA

General Statistics

NEBRASKA	
Electricity Price (cents/kWh)	**4.6**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Restructuring	**N**
Financial Incentives	**Y**
Loans or Grants	

Population: (1995) 1,637,112 (37th) - 67% Urban - 33% Rural
Total Area: 77,355 Square Miles
Principal Industries: Agriculture, manufacturing
Manufactured Goods: Processed foods, industrial machinery, printed materials, electric and electronic equipment.
Non-Attainment Areas: 0
Gross State Product (GSP): $37,21 billion

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 0
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 2,898
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 13
Principle Source of Electric Power Generation: Coal, Nuclear, Hydro, Gas, Fuel Oil

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
179.5	133.7	218.5	71.3	354.0

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
133.0	120.1	159.6	167.6	580.3

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
<0.05 (2)	<0.05 (2)	<0.05 (2)	<0.05 (3)	<0.05 (4)	<0.05 (4)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

1990	1991	1992	1993	1994	1995
4.0 (201)	4.2 (212)	4.5 (223)	3.7 (186)	3.6 (182)	4.0 (202)

NEBRASKA

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
54	64	16045	*	*	7	*	*	144	0	*	*

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

Nebraska has solar access laws allowing property owners to create solar easements to protect access to sunlight. In 1997, these laws were amended to include easements for wind.

Income Tax Incentives

None.

Solar Property Tax Incentives

None.

Solar Contractor Licensing and Equipment Certification

None.

Net Metering

None.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program

NEBRASKA

- Weatherization Assistance Program
- Climate Wise
- Dollar and Energy Savings Loan Program
- Energy Efficient Mortgages
- Rebuild Nebraska
- Mortgage Loan Supplement

Contacts

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NEW MEXICO

General Statistics

Population: (1995) 1,685,401 (36th) - 73% Urban - 27% Rural
Total Area: 121,593 Square Miles
Principal Industries: Government, services, trade
Manufactured Goods: Foods, machinery, apparel, lumber, printing, transportation equipment.
Non-Attainment Areas: Sunland Park, Ozone 9/95; Albuquerque, Carbon Monoxide 1990
Gross State Product (GSP): $31.86 billion

NEW MEXICO	
Electricity Price (cents/kWh)	**7.1**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**Y**
Restructuring	**N**
Financial Incentives	**N**

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 25,438
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 1,577,689
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 190
Principle Source of Electric Power Generation: Coal, Gas, Hydro, Fuel Oil

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
275.3	219.4	208.2	56.0	340.3

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
80.0	96.2	202.4	196.3	575.0

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
0.5 (148)	0.5 (150)	0.5 (152)	0.5 (152)	0.5 (155)	0.5 (157)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

NEW MEXICO

1990	1991	1992	1993	1994	1995
3.1 (157)	3.3 (165)	3.5 (174)	3.3 (163)	3.2 (160)	3.5 (177)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
63	97	29011	*	*	21	*	4	1810	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

The Solar Rights Act of 1978 contains provisions allowing property owners to create solar easements to protect access to sunlight. According to New Mexico's Energy Conservation and Management Division, about four easements are granted each year.

Income Tax Incentives

None.

Solar Property Tax Incentives

None.

Solar Contractor Licensing and Equipment Certification

None.

Net Metering

In 1988, New Mexico Public Service Commission issued Rule 570 which established net metering for facilities less than 100kW in size. If the generators are offsetting their own load, then there is no charge for net

metering, but the utility does not purchase the excess generation. If there is excess generation, the utility installs meters to measure electricity flow each way, and pays the generator the avoided cost of any net excess generation. There is a charge for billing and administration of this second option.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program
- Energy Information Program (EIP)
- Rideshare Program
- Institutional Conservation Program
- Recycling and Resource Program
- Transportation Program
- Native American Set-Aside Program
- State Buildings Program
- Technical Assistance Program
- Alternative Fuels (HB 694)
- Weatherization Project Permit Exemption (SB 809)

Contacts

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NORTH DAKOTA

General Statistics

Population: (1995) 641,367 (47th) - 54 % Urban - 46 % Rural
Total Area: 70,703 Square Miles
Principal Industries: Agriculture, mining, tourism, manufacturing, telecommunications, energy
Manufactured Goods: Farm equipment, processed foods, fabricated metal, high-tech electronics
Non-Attainment Areas: 0
Gross State Product (GSP): $13.06 billion

NORTH DAKOTA	
Electricity Price (cents/kWh)	**5.2**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**Y**
Restructuring	**N**
Financial Incentives	**Y**
Solar Property Tax	
Personal Income Tax	

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 29,289
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 57,805
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 85
Principle Source of Electric Power Generation: Coal, Hydro, Fuel Oil

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
399.8	47.6	118.0	26.9	545.8

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
57.0	43.6	175.9	74.6	350.1

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

NORTH DAKOTA

1990	1991	1992	1993	1994	1995
1.7 (84)	1.8 (88)	1.9 (93)	1.5 (77)	1.5 (76)	1.7 (84)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
148	56	33204	*	*	38	0	0	*	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

None.

Income Tax Incentives

North Dakota statute 57-38-01.8 allows any taxpayer to deduct five percent (5%) of the cost of equipment and installation of a geothermal, solar or wind energy device for a period of three years.

Solar Property Tax Incentives

Renewable Energy Systems Exemption. Solar, wind and geothermal energy systems, either stand alone or in conjunction with a conventional energy system, are exempt from property taxes for the first five years after installation. Only the renewable energy portion of a system with some conventional sources is exempt from tax.

Solar Contractor Licensing and Equipment Certification

None.

NORTH DAKOTA

Net Metering

In 1991, the North Dakota Public Utility Commission passed a net metering rule covering renewable energy systems and cogenerators under 100 kW of capacity. It is available to all customers and there are no state limits on the amount of generation covered. The utilities are required to purchase the net excess generation at their avoided cost.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program
- Weatherization Assistance Program
- State Buildings Program
- Energy Codes Program
- FEMP - Workshop on Performance Contracting & Association for Federal Plant Managers
- High Efficiency Furnace Replacement Rebate Program (Flood Victims)
- Alternative Fuels
- Sustainable Development - Flood Response

Contacts

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OKLAHOMA

General Statistics

Population: (1996) 3,277,687 (27th) - 70% Urban - 30% Rural
Total Area: 69,956 Square Miles
Principal Industries: Manufacturing, mineral and energy exploration & production, agriculture, services.
Manufactured Goods: Non-electrical machinery, transportation equipment, food products, fabricated metal products, aviation & aerospace, telecommunications, plastics, printing & publishing.
Non-Attainment Areas: 0
Gross State Product (GSP): $60.19 billion

OKLAHOMA	
Electricity Price (cents/kWh)	**4.7**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**Y**
Restructuring	**Y**
Financial Incentives	**N**

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 1,733
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 1,934,864
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 265
Principle Source of Electric Power Generation: Coal, Gas, Hydro, Fuel Oil

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
343.5	579.5	446.2	141.2	415.2

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
253.3	183.6	556.3	366.3	1,359.6

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
0.1 (23)	0.1 (23)	0.1 (23)	0.1 (23)	0.1 (23)	0.1 (23)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

OKLAHOMA

1990	1991	1992	1993	1994	1995
6.9 (345)	7.3 (364)	7.7 (383)	6.7 (335)	6.6 (328)	7.3 (364)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
92	93	30781	*	*	31	*	27	8034	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

None.

Income Tax Incentives

None.

Solar Property Tax Incentives

None.

Solar Contractor Licensing and Equipment Certification

Oklahoma requires wind turbines and PV modules to be certified by the Solar Rating and Certification Corporation (SRCC), the American Wind Energy Association (AWEA), the Oklahoma Solar Energy Industries Association (SEIA), or a nationally recognized certification agency. The regulations also require that buyers receive information on solar and wind energy resource information and on the product performance relative to certification standards. Furthermore, the regulations require that all renewable energy generating equipment come with at least a three-year warranty covering any flaws in the design, manufacture, or installation.

OKLAHOMA

Net Metering

In 1988, the Oklahoma Corporate Commission issued an order establishing a net metering program for facilities with cogeneration capacity under 100 kW. The program applies to all customers, and there is no limit to the states net metering capacity. Under the ruling, utilities are not required, but can accept requests to purchase net generation at the utility's avoided cost rate. Utilities are not allowed to charge customers additional charges for participating in the net metering program.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program
- Community Energy Education & Management Program/Revolving Loan for Municipalities, City and /County Governments - Retrofits
- State Agency Lease Purchase Program
- Energy Loan Lease Fund - Schools K through 12
- Weatherization Assistance Program
- Clean Cities
- Alternative Fuels Revolving Loan Program (Private & Non-profits over 3 vehicles)

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SOUTH DAKOTA

General Statistics

SOUTH DAKOTA	
Electricity Price (cents/kWh)	**5.2**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Partial Restructuring	**Y**
Financial Incentives	**Y**
Solar Property Tax	

Population: (1995) 729,034 (45th) - 50% Urban - 50% Rural
Total Area: 77,355 Square Miles
Principal Industries: Agriculture, services, manufacturing.
Manufactured Goods: Food and kindred products, machinery, electric and electronic equipment.
Non-Attainment Areas: 0
Gross State Product (GSP): $15.13 billion

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 0
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 1,437
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 4
Principle Source of Electric Power Generation: Hydro, Coal, Fuel Oil, Gas

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
36.7	34.8	114.5	25.3	323.2

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
57.2	39.3	58.1	81.2	235.8

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)	<0.05 (<0.5)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

1990	1991	1992	1993	1994	1995

SOUTH DAKOTA

1.8 (89)	1.9 (94)	2.0 (98)	1.7 (83)	1.6 (81)	1.8 (90)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
33	12	3096	*	*	3	0	*	2	*	*	8

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

None.

Income Tax Incentives

None.

Solar Property Tax Incentives

Renewable Energy Systems Exemption. Residential and commercial solar, wind and geothermal energy systems, either stand alone or in conjunction with a conventional energy system, are exempt from property taxes. The exemptions apply to the entire value of residential systems and 50% of the value of commercial systems. Exemptions can be taken for the first three years after installation, and they do not apply to systems that produce energy for resale.

Solar Contractor Licensing and Equipment Certification

None.

Net Metering

None.

SOUTH DAKOTA

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program
- Public Facilities Energy Efficiency Program
- Lighting Retrofits for Schools
- Governor's Ethanol Coalition

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TEXAS

Solar General Statistics

TEXAS	
Electricity Price (cents/kWh)	**6.1**
Utility Solar Generation	**Y**
Green Pricing Programs	**Y**
Net Metering	**Y**
Restructuring	**N**
Financial Incentives	**Y**
Industry Recruitment	
Corporate Imcome Tax	
Solar Property Tax	

Population: (1995) 18,378,185 (2nd) - 81% Urban -19% Rural
Total Area: 266,807 Square Miles
Principal Industries: Trade, oil & gas extraction, services, manufacturing.
Manufactured Goods: Machinery, transportation equipment, foods, electrical and electronic products, chemical and allied products, apparel.
Non-Attainment Areas: El Paso (Carbon Monoxide) and Beaumont-Port Arthur, Dallas-Ft.Worth, El Paso, Houston-Galveston-Brazoria (Ozone)
Gross State Product (GSP): $416.87 billion

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 47,488
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 6,353,844
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 1,699
(Includes 1,935 off shore oil production)
Principle Source of Electric Power Generation: Coal, Gas, Nuclear, Hydro, Other, Fuel Oil, (Other includes generation by geothermal, wood waste, wind and solar).

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
1,361.7	3,943.2	4,746.3	898.3	559.1

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
1,220.0	1,079.8	6032.9	2,169.3	10,511.5

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
0.3 (95)	0.4 (107)	0.4 (108)	0.4 (111)	0.4 (120)	0.4 (126)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)

TEXAS

Data Year

1990	1991	1992	1993	1994	1995
14.9 (746)	15.7 (786)	16.5 (827)	14.5 (725)	14.2 (711)	15.8 (789)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
470	372	133436	1	*	272	*	179	60916	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

The City of Austin recently established the Solar Explorer program to support residential and commercial installations of photovoltaic systems. Residential and commercial customers can participate by paying an extra $7 per 100 Watt blocks for PV power. The program, which is partially funded by the Utility Photovoltaic Group Team-Up program, expects to initially install about 250 kW of photovoltaics.

Another green pricing program in Texas, called the Clear Choice Program, is being development by Central and Southwest Services (CSW), a holding company for privately held utilities -- Central power and Light, West Texas Utilities, Southwestern Electric Power and Public Service Company of Oklahoma. In the early stages of development, a survey was conducted of more than 900 customers, and 80% indicated that they would be willing to pay some extra amount in their electricity bills for renewable energy. However, CSW expects only 5% of customers to participate in the program. The primary renewable energy sources will most likely be wind and land fill gas generation. When the program is established, CSW expects to add about 40-50 MW of renewable energy capacity to the 6.5 MW of wind power currently being used. The CSW green pricing tariff is currently pending approval by the Texas Public Utilities Commission.

The Texas state legislature recently adopted legislation requiring the Texas Public Utility Commission to develop a pilot program to give customers an option to buy green power. Working in conjunction with utilities and municipal utility boards, the PUC will determine the percentage, which must be 5% or greater, of customers in each utility district that will be able participate. Power producers interested in participating must be certified by the PUC and offer a fuel mix that includes at least 10% renewable energy. Under this program, the costs of generation, transmission, and distribution will be unbundled in customer utility bills.

Disclosure and Certification

None.

TEXAS

Solar Access Laws

None.

Income Tax Incentives

Statute 2F@171.107 allows a corporation to deduct the cost of a solar energy device in one of two ways: (1) the total cost may be deducted from the company's taxable capital or (2) 10% of the cost may be deducted from the company's income. Both taxable capital and a company's income are taxed under the franchise tax. Also, corporations engaged solely in manufacturing, selling, or installing solar energy devices are exempt from the Texas franchise tax.

Solar Property Tax Incentives

Texas has a Solar and Wind-Powered Energy Systems tax exemption policy. The statute exempts taxpayers from paying the value added by qualified renewable energy systems, including active, passive, photovoltaic systems, wind energy systems, and transmission equipment.

Solar Contractor Licensing and Equipment Certification

In order to be eligible for state tax exemptions, solar energy collectors are required to be certified by the Solar Rating and Certification Corporation (SRCC) or the Air Conditioning and Refrigeration Institute (ARI).

Net Metering

In 1986, the Texas Public Utilities Commission adopted a net metering rule requiring utilities to offer the option of net metering to qualified facilities of 50 kW or less that use renewable energy sources. The utilities are required to install meters that can read electricity flow in both directions and to pay participating facilities the utility's avoided cost for any net excess generation. All classes of customers are eligible for the program and currently about 25 wind facilities participate.

State Construction Policies

In Texas, state government departments are required by law to compare the cost of alternative energy sources for new buildings. The statute requires the use of alternative energy devices if they are determined to be economically feasible. It specifically states, "If the use of alternative energy devices for a particular function is determined to be economically feasible...the commission or governing body shall include the use of alternative energy devices...in construction plans."

Other Solar and Energy Efficiency Programs

- State Energy Program
- Energy Education Outreach Program
- Housing Partnership Program
- Texas LoanSTAR Program
- School Energy Management Program
- Renewable Energy Demonstration Program
- SECO Business Opportunities Projects

TEXAS

- Sustainable Development
- Alternatives Fuels/Transportation

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UTAH

General Statistics

Population: (1995) 1,951,408 (34th) - 88% Urban - 12% Rural
Total Area: 84,899 Square Miles
Principal Industries: Manufacturing, trade, services, government, construction
Manufactured Goods: Guided missiles and parts, electronic components, food products, fabricated metals, steel, electrical equipment, automobile airbags.
Non-Attainment Areas: Salt Lake City/Ogden (Ozone & Carbon Monoxide); Provo/Orem (Carbon Monoxide)
Gross State Product (GSP): $ 35.59 billion

UTAH	
Electricity Price (cents/kWh)	**5.1**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Restructuring	**N**
Financial Incentives	**Y**
Personal Income Tax	
Corporate Income Tax	

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 22,134
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 270,858
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 60
Principle Source of Electric Power Generation: Coal, Hydro, Gas, Fuel Oil, Other - (Other includes generation by geothermal, wood, waste, wind and Solar)

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
357.2	166.7	234.2	63.0	326.0

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
110.4	100.6	245.8	184.5	638.4

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
<0.05 (10)	<0.05 (10)	<0.05 (10)	<0.05 (10)	<0.05 (13)	<0.05 (13)

UTAH

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

1990	1991	1992	1993	1994	1995
3.0 (148)	3.1 (156)	3.3 (164)	3.1 (156)	3.1 (153)	3.4 (169)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
29	43	33235	*	*	23	*	1	446	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

In Utah, solar easements can be voluntarily created to protect and maintain access to sunlight. Once they have been created, solar easements are applicable to the property not the owner until a specified date. The easements are enforceable by law, but access to solar radiation is not a right until an easement is created. According to the statute, local zoning authorities may adopt regulations that mandate solar access.

Income Tax Incentives

These corporate and individual income tax credits (59-7-611 and 59-10-601) for renewable energy systems on commercial and residential buildings allow for credit of 25% of the cost of installation of a system up to a maximum credit of $2,000 per system. For commercial systems, the credit is 10% of the cost of installation up to $50,000. The tax credits expires on January 1, 2001.

Solar Property Tax Incentives

None.

UTAH

Solar Contractor Licensing and Equipment Certification

In order for systems to be eligible for Utah's Energy Saving System Tax Credit, they must be installed by licensed solar contractors and carry a warranty. Specific licensing criteria for solar contractors was developed by Utah's Division of Occupational and Professional Licensing. Solar systems must be meet acceptable certification standards, such as the Solar Rating and Certification Corporation Certification Program (SRCC). Before the system is installed, an application for certification must be submitted to the Office of Energy and Resource Planning in order for it to be eligible for the tax credit.

Net Metering

None.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- State Energy Program (SEP)
- Public Building Energy Financing Programs
- Commercial/Industrial Energy Efficiency Program
- 2002 Olympic Project
- Technology Demonstrations
- Energy Efficient Design Engineering (Office of Energy and Resource Planning)
- FEMP (Office of Energy and Resource Planning)
- Renewable energy (Office of Energy and Resource Planning
- Utah Clean Fuels Program
- Green Lights Program
- Low-Income Weatherization Program

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WYOMING

General Statistics

Population: (1995) 480,184 (50th) - 65% Urban - 35% Rural
Total Area: 97,809 Square Miles
Principal Industries: Mineral extraction, tourism & recreation, agriculture.
Manufactured Goods: Refined petroleum products, foods, wood products, stone, clay and glass products.
Non-Attainment Areas: 0
Gross State Product (GSP): $ 13.19 billion

WYOMING	
Electricity Price (cents/kWh)	**4.3**
Utility Solar Generation	**N**
Green Pricing Programs	**N**
Net Metering	**N**
Restructuring	**N**
Financial Incentives	**N**

Energy Consumption Summary

Coal Production Thousand Metric Tons (1994 EIA Data): 215,086
(#1 in nation)
Marketed Production Natural Gas Million Cubic Feet (1994 EIA Data): 696,018
Daily Average Crude Oil Production Thousand Barrels (1993 EIA Data): 240
Principle Source of Electric Power Generation: Coal, Hydro, Fuel Oil, Gas

Energy Consumption by Source & Per Capita (1995 EIA Data):
Trillion Btu

Coal	Natural Gas	Petroleum	Electricity	Per Capita
461.9	103.9	136.8	38.2	845.6

Energy Consumption by Sector (1995 EIA Data):
Trillion Btu

Residential	Commercial	Industrial	Transportation	TOTAL
37.8	40.1	227.2	100.0	405.2

Residential Solar Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Million Kilowatt hours)
Data Year

1990	1991	1992	1993	1994	1995
<0.05 (1)	<0.05 (1)	<0.05 (1)	<0.05 (1)	<0.05 (1)	<0.05 (1)

Residential Biofuels Energy Consumption Estimates (State Energy Data Report 1995 - EIA):
Trillion Btu (Thousand Cords)
Data Year

WYOMING

1990	1991	1992	1993	1994	1995
1.0 (50)	1.1 (53)	1.1 (56)	1.0 (51)	1.0 (50)	1.1 (56)

Estimated Emissions from Fossil-Fuel Electric Generation (1994 EIA Data):
Thousand Short Tons

COAL			PETROLEUM			GAS			OTHER		
SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2	SOX	NOX	CO-2
85	86	43835	*	*	39	0	*	7	0	0	0

Portfolio Standards and Set Asides

None.

Systems Benefits Charges

None.

Green Pricing

None.

Disclosure and Certification

None.

Solar Access Laws

In 1978, Wyoming adopted the Solar Rights Act providing unrestricted solar access to all new construction. In contrast to many solar access laws enacted by other states, this law essentially designates access to sunlight as a property right and it specifically states that sunlight cannot be obstructed from 9:00 am to 3:00 pm on the day with the least amount of sunlight. Power is given to local governments to determine how the law is implemented, through permitting systems or other methods. It does not, however, prohibit local housing developments from adopting covenants to prevent solar systems for aesthetic reasons.

Income Tax Incentives

None.

Solar Property Tax Incentives

None.

Solar Contractor Licensing and Equipment Certification

None.

WYOMING

Net Metering

None.

State Construction Policies

None.

Other Solar and Energy Efficiency Programs

- U. of Wyoming Solar/Wind stock water pumping
- U. of Wyoming Electric Motor Testing Lab
- Energy planning as an economic development tool
- Demonstrations of power factor controller devices
- Energy conservation with state and National Guard buildings
- Energy conservation - schools and hospitals
- Energy conservation advertising
- Energy conservation school curriculum development
- Energy conservation in State and National Parks
- Photovoltaic demonstrations in the public and private sector
- Publication of Statewide Recycling Director

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